DVD PLAYER

DVD-HD1000

Multi-mode PICKUP   DVD   COMPACT disc DIGITAL AUDIO   dts DIGITAL SURROUND   DOLBY DIGITAL   HDCD   MLP LOSSLESS   phantom surround   FAROUDJA   DCDi byFAROUDJA

AK68-00118B

Safety Precautions

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER(OR BACK). NO USER-SERVICEABLE PARTS ARE INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol indicates "dangerous voltage" inside the product that presents a risk of electric shock or personal injury.

This symbol indicates important instructions accompanying the product.

CAUTION: DVD PLAYERS USE AN INVISIBLE LASER BEAM WHICH CAN CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE PLAYER CORRECTLY AS INSTRUCTED.

CAUTIONS

Caution: To prevent electric shock, match wide blade of plug to wide slot, and fully insert.
Attention: Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu au fond.
This product satisfies FCC regulations when shielded cables and connectors are used to connect the unit to other equipment. To prevent electromagnetic interference with electric appliances, such as radios and televisions, use shielded cables and connectors for connections.

FCC NOTE (for U.S.A):

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect this equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.
   This class B digital apparatus meets all requirements of the Canadian Interference --
   Causing Equipment Regulations.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT
PRODUCTO	LASER CLASE 1

WARNING
To reduce the risk of fire or shock hazard, do not expose this DVD-HD1000 to rain or moisture.

CAUTION
THIS PRODUCT UTILIZES A LASER. ANY USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE. DO NOT OPEN COVER, AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

Note:
• This unit can be used only where the power supply is AC 120V, 60Hz. It cannot be used elsewhere.

• This DVD-HD1000 is designed and manufactured to respond to the Region Management Information. If the Region number of a DVD disc does not correspond to the Region number of this DVD-HD1000, the DVD-HD1000 cannot play the disc.

• This device is protected by U.S. patent numbers 4,631,603, 4,577,216,4,819,098 and other intellectual property rights. The use of Macrovision's copy protection technology in the device must be authorized by Macrovision and is intended for home and other limited pay-per-view uses only, unless otherwise authorized in writing by Macrovision. Reverse engineering or disassembly is prohibited.

Handling Cautions

• Before connecting other components to the DVD-HD1000, be sure to turn them all off.

• Do not move the DVD-HD1000 while a disc is being played, as the disc may be scratched or broken and the unit's internal parts may be damaged.

• Do not put a flower vase filled with water or any small metal object on the DVD-HD1000.

• Be careful not to put your hand into the disc tray.

• Do not place anything other than the disc in the disc tray.

• Exterior interference such as lightning and static electricity can affect normal operation of this unit. If this occurs, turn the DVD-HD1000 off and on again with the POWER button, or disconnect and then reconnect the AC power cord to the AC power outlet. Then, the unit will operate normally.

• Be sure to remove the disc and turn off the DVD-HD1000 after use.

• Disconnect the AC power cord from the AC outlet when you don't intend to use the DVD-HD1000 for long periods of time.

• Clean the disc by wiping in a straight line from the inside to the outside of the disc.

Disc Storage

Be careful not to harm the disc because the data on these discs is highly vulnerable to the environment.

• Do not keep under direct sunlight.

• Keep in a cool ventilated area.

• Store vertically.

• Keep in a clean protection jacket.

Maintenance of Cabinet

For safety reasons, be sure to disconnect the AC power cord from the AC outlet.

• Do not use benzene, thinner, or other solvents for cleaning.

• Wipe the cabinet with a soft cloth.

Safety Instructions

1. **Read Instructions** - All the safety and operating instructions should be read before the product is operated.

2. **Retain Instructions** - The safety and operating instructions should be retained for future reference.

3. **Heed Warnings** - All warnings on the product and in the operating instructions should be adhered to.

4. **Follow Instructions** - All operating and using instructions should be followed.

5. **Cleaning** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aeroso cleaners. Use a damp cloth for cleaning.

6. **Attachments** - Do not use attachments not recommended by the product manufacturer as they may cause hazards.

7. **Water and Moisture** - Do not use this product near water-for example near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool;   and the like.

8. **Accessories** - Do not place this product on an unstable cart, stand, tripod, bracket, or table.
   The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product. Any mounting of the product should follow the manufacturer instructions and should use a mounting accessory recommended by the manufacturer.

9. **Cart Usage** - A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

10. **Ventilation** - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating.
    These openings must not be blocked or covered.
    The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacture instructions have been adhered to.

11. **Power Sources** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

12. **Grounding or Polarization** - This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other).
    This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

13. **Power** - Cord Protection-Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

14. **Lightning** - For added protection for this product during a lightning storm or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

15. **Power Lines** - An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

16. **Overloading** - Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

17. **Object and Liquid Entry** - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

18. **Servicing** - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

19. **Damage Requiring Service** - Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    - **a** When the power-supply cord or plug is damaged.
    - **b** If liquid has been spilled or objects have fallen into the product.
    - **c** If the product has been exposed to rain or water.
    - **d** If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
    - **e** If the product has been dropped or damaged in any way.
    - **f** When the product exhibits a distinct change in performance-this indicates a need for service.

20. **Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

21. **Safety check** - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

22. **Heat** - The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

3

4

Table of contents

This manual is divided into five chapters.
Use the index on each page to quickly and easily jump to a specific topic.

Information on DVDs

DVD VIDEO A single-sided DVD can store up to 135 minutes of video, up to 8 different audio languages, and up to 32 subtitles. You can enjoy movie theater like picture and sound quality achieved by the use of MPEG-2 video compression and Dolby Digital surround sound technologies.

Both the DVD player and the disc are coded by region. These region codes must match in order for the disc to play.
Use only discs that are labeled with one of the markings shown on the left.
(DVDs with region code other than "1" or "ALL" cannot be played on this player.)

Playable Discs

Type	Mark (logo)	Content	Size	Max. Playing Time
DVD-Video	DVD VIDEO	Audio + Video	5"	240 min. (single-sided)
				480 min. (double-sided)
			$3\frac{1}{2}$ "	80 min. (single-sided)
				160 min. (double-sided)
DVD-Audio	DVD AUDIO	Audio + Video	5"	400 min.
VIDEO-CD	COMPACT disc	Audio + Video	5"	74 min.
			$3\frac{1}{2}$ "	20 min.
AUDIO-CD	COMPACT disc DIGITAL AUDIO	Audio	5"	74 min.
			$3\frac{1}{2}$ "	20 min.

DOLBY DIGITAL	dts	DIGITAL SOUND	STEREO	NTSC
Dolby Digital	DTS	Digital Audio	Stereo disc	The TV broadcast system used in Korea, Japan, USA, Canada and other countries.
MP3	HDCD	DVD AUDIO		
MP3	HDCD	DVD Audio		

Do not use the following types of discs!

• Do not play LDs, CDGs, CD-Is, CD-ROMs, DVD-ROMs, DVD-RAMs on this player.
• Commercial discs or DVD discs that were purchased outside your region may not play on this unit.
When you attempt to play such a disc, the following message will appear on your TV screen:
"This disc cannot be played from this region. Please check the region code of the disc."
• Only Video-CD 1.1 format is supported. Video-CD 2.0 will be played back in Video CD 1.1 format.

Disc Copy Protection

• Many DVD discs are encoded with copy protection. Because of this, you should only connect your DVD player directly to your TV, not to a VCR. Connecting to a VCR results in a distorted picture from copy-protected discs.

• This product incorporates copyright protection technology that is protected by methods claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

This product is manufactured under license from Dolby Laboratories, and **DOLBY DIGITAL**® and "Dolby" are trademarks of Dolby Laboratories.

This product is manufactured under license from Digital Theater Systems, Inc., and **dts** is a trademark of Digital Theater Systems, Inc.

FAROUDJA

This product incorporates Faroudja's Emmy-award winning patent technology, $\mathcal{F}$ is a trademark of Genesis Microchip Inc.

HDCD

HDCD ®, HDCD® , High Definition Compatible Digital®, and Pacific Microsonics™ are either registered trademarks or trademarks of Pacific Microsonics, Inc. in the United States and/or other countries.

Disc Recording Methods

CD-R

- Some CD-Rs may not play on this unit depending on the equipment used for its recording or the condition of the disc.
- Use a 630MB (74 minute) CD-R disc. If possible, do not use a 700MB (80 minute) or above disc, as the disc may not play back.
- If possible, do not use a CD-RW (recordable/rewritable) disc, as the disc may not play back.
- When you burn a CD-R, be sure to burn the disc as "Close CD", and not as "Close Session and Leave CD Open". The latter may not play back well.

CD-R MP3 Discs

- Only CD-R discs with MP3 files in ISO 9660 or Joliet format can be played.
- The MP3 file name must not be longer than 8 characters and should contain no blank spaces or special characters.
- MP3 song titles in Korean will not be displayed in Korean.
- Use discs recorded with a compression/decompression data rate greater than 128Kbps.
- Only files with the ".mp3" and ".MP3" extensions can be played.
- Only a consecutively written Multisession disc can be played. If there is a blank segment in the Multisession disc, the disc can be played only up to the blank segment.
- If the disc is not "closed", it will take longer to start playback and not all of the recorded files may be played back.
- For files encoded in Variable Bit Rate (VBR) format, i.e. files encoded in both low bit rate and high bit rate (e.g., from 32Kbps to 320Kbps), the sound may skip during playback.
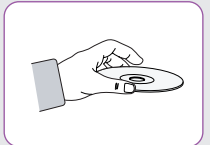
NOTE
- The above are some of the factors that could lower the sound quality when playing back MP3 files.
- Keep in mind when recording an MP3 file to a CD-R.
- Depending on the recording method used on the disc, MP3-CDs may not play back.

Cautions on Handling Discs

Cautions on Handling Discs

- Even the slightest scratch on the surface of the disc may lower sound and picture quality or cause breaks in playback.

Caution
- Do not get fingerprints, grease, or dirt on the disc.
- Do not use a cracked or heavily scratched disc.

Storing Discs

Place not exposed to direct sunlight.
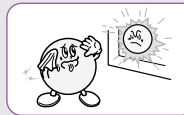
Well-ventilated place.
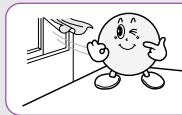
Place where discs can be kept in their cases and stored vertically.
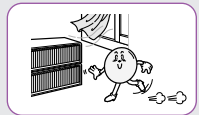
Cleaning Discs

Wash off any fingerprints or dirt with a diluted solution of neutral detergent and then wipe dry with a soft cloth.
- Wipe in a straight line from the center of the disc to the outer edge.

NOTE
- Condensation may form if warm air comes in contact with any cold parts inside the player. When condensation forms on the parts inside the player or on the lens, the player may not play back. If this occurs, let stand for 1 to 2 hours with the power on before inserting the disc.

Key Features

DVD-Audio Playback Capability

This is the audio-only format of DVD that increases the sampling rate and quantizing bits more than existing CDs to reproduce sounds that are closer to the original.
It supports up to 192 KHz/24 bit, allowing you to enjoy high-quality sound.

High Quality Sound by Employing Fluency/Shannon Filter

The Fluency Filter eliminates the 20 KHz cutoff so you can enjoy the extended frequency response of DVD Audio discs.
The Shannon Filter substantially reproduces the Audio Signals recorded in the Disc with almost no distortion.

Supports HD (720p/1080i) Video Output

HD (High Definition) video has 1080i or 720p picture quality and 16:9 aspect ratio.
It converts the DVD SD video signal to a 720 line maximum HD format to provide a higher picture quality than existing DVDP.

Supports Progressive Scan Video Output

Compared with interlaced scan, it displays all lines of a frame in one pass. In particular, the DVD-HD1000 incorporates Faroudja's DCDi™ technology to eliminate jagged edges that appear on progressive-scan displays, producing the highest picture quality.

11

12

Part Names

Front Panel

- Standby indicator
- Disc tray
- OPEN/CLOSE button
- POWER button
- STOP button
- HDCD indicator
- Fluency DAC indicator
- PLAY/PAUSE button
- Skip buttons
- DVD-AUDIO indicator

Display

- Chapter indicator
- Dolby Digital indicator
- Disc Type indicator
- Title indicator
- Repeat indicator
- LPCM indicator
- DTS indicator
- MPEG indicator
- MP3 indicator
- Operation Status indicator
- Play/Pause indicator
- 3D indicator
- Track indicator
- Title, Chapter, Track Message display
- Angle indicator

Rear Panel

- Dolby Digital 5.1-channel output jacks
  Connect to an amplifier with 5.1-channel analog inputs.
- Video output jack
  Connect to VIDEO IN on your TV.
- Analog audio output jacks
  Connect to the input jacks on your TV, Audio or VCR.
- AC Power input jack
- Component video output jacks (480i)
- Digital audio output jack
  Connect to a Dolby Digital amplifier.
- Component video output jacks (480p/720p/1080i)
- Video output select switch (480p/720p/1080i)
- S-Video output jack
  Connect to a TV with S-Video input jack.

Accessories

Remote Control (AH59-00091B)	"AAA" Batteries (AC43-12002H)	Video/Audio Cable (AH39-00439A)
Power Cord (3809-000058)	S-Video Cable (AH39-00439B)	User's Guide (with Warranty Card) (AK68-00118B)

Remote Control

DVD POWER button

Number buttons

GROUP button
Use this to select a group when playing back a DVD-Audio disc.

INDEX buttons
Use these to play the previous index in the same audio track or the next index while playing a DVD-Audio disc.

SKIP button
Press this to move back to the beginning of the current chapter or to the previous chapter.

3D button
Press this to listen to 3D surround sound through two existing stereo speakers.

STOP button

RETURN button
Press this to return to the previous menu screen.

SUBTITLE button
Press this to switch the DVD's subtitle language.

ANGLE button
Press this to switch the angle. However, this function works only if the DVD-Video disc contains multi-angle content.

MENU button
Press this to display the disc menu.

TITLE MENU button
Press this to move to the desired title if the disc contains multiple titles.

AUDIO button
Press this to enjoy various audio functions recorded on the disc.

TV POWER button

SH./FE. button
Use this to remove the 20KHz cut-off filter.

PAGE buttons
When playing a DVD-Audio disc, use this to display the previous or still image while playing a track containing browsable still images when playing a DVD-Audio disc.

SKIP button
Press this to move ahead to the beginning of the next chapter.

PLAY/PAUSE button

OPEN/CLOSE button

ENTER/Cursor buttons

DISPLAY button
Press this to display disc information, such as title, chapter and track number, elapsed playing time, audio/subtitle language and so on.

JOG/SHUTTLE button

JOG/SHUTTLE dial

VIDEO OFF button
Press this to hide the screen during DVD-Audio playback.

SETUP button

REPEAT button
Press this to repeatedly play a title, chapter, track, disc, or some part on a disc.

MODE button
Use this to set up the CD playback order.

A-B REPEAT button
Use this to repeatedly play a specific segment.

CLEAR button

STEP button

ZOOM button
Use this to enlarge the area on the screen.

BOOKMARK button
Use this to save a favorite scene within a movie.

TV CHANNEL ▲/▼ buttons

TV VOLUME +/- buttons

TV/VIDEO button

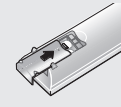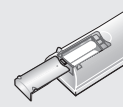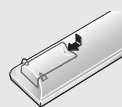## Install Batteries in the Remote

1 Open the battery cover on the back of the remote.

2 Insert two AAA batteries. Make sure that the polarities (+ and -) are aligned correctly.

3 Replace the battery cover.

15

16

Setup

Remote Control

Controlling a TV with the Remote

The remote can also be set up to control most TVs. To program the remote, use the code that corresponds to your brand.

1 Turn on the TV

2 Point the DVD's remote at the TV.

3 While holding the TV POWER button down, enter the code for your brand.

4 If the TV turns off, setup is complete. Enter other codes of the same brand if the first code does not work.

TV Codes

| Code	Brand	Code	Brand
01	SAMSUNG_1	16	SHARP_1
02	SHARP_2	17	ZENITH
03	SONY	18	LG_3
04	MAGNAVOX	18	DAEWOO_8
05	SANYO_1	20	SANYO_2
06	LG_2	21	EMERSON
07	RCA	22	SHARP_3
08	LG_1	23	SAMSUNG_4
09	TOSHIBA	24	PANASONIC_2
10	HITACHI	25	NOBLEX
11	JVC	26	TELEFUNKEN
12	PANASONIC_1	27	NEWSAN
13	MITSUBISHI_2	28	LOEWE
14	SAMSUNG_2	29	RCA2
15	SAMSUNG_3		

NOTE
For Samsung_1 TVs
• While holding down the TV POWER button, enter 0 and then 1.
• The remote may not be able to control every model TV of the brands listed.

If remote does'n operate properly:

• Check the polarity + - of the batteries (Dry-Cell)
• Check if the batteries are drained.
• Check if remote sensor is blocked by obstacles.
• Check if there is any fluorescent lighting nearby.

Connecting to a TV

Method 1 Through Video and Audio Outputs
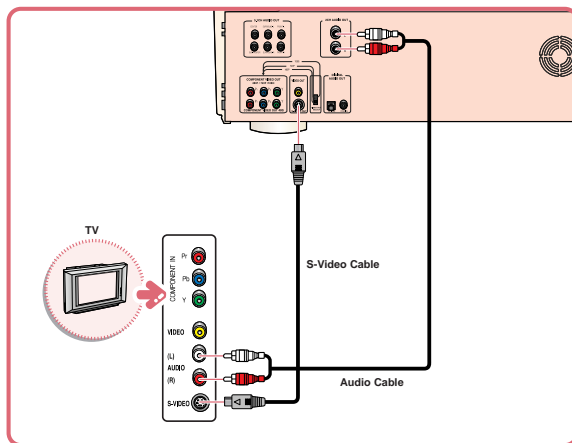

TV

Video Cable

Audio Cable
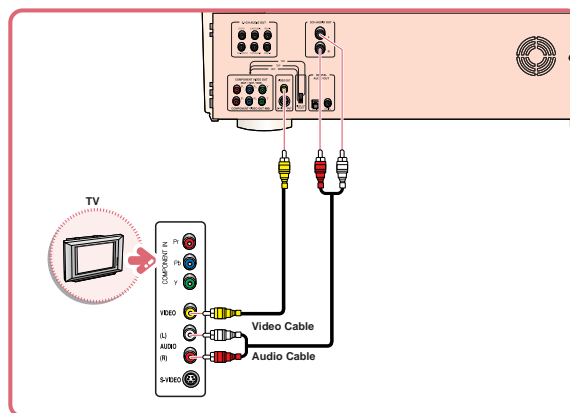
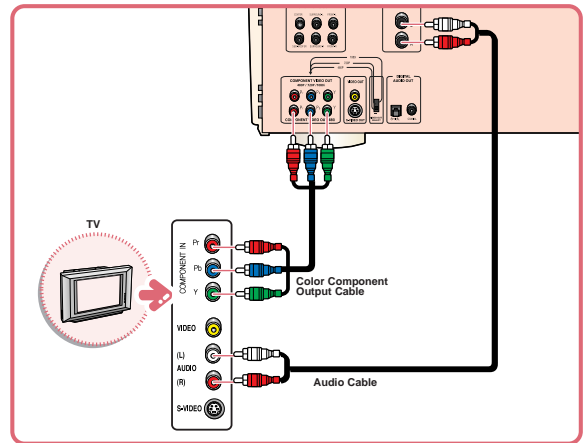**1** Connect the DVD player's AUDIO OUT (L/R) and VIDEO OUT to your TV's AUDIO IN and VIDEO IN.

2 Press the TV/VIDEO button on the remote control to set the TV to "AV1" or "AV2".

Types of Color Video Signals

• Video (Composite): A single video signal that is a composite of the black and white information (Y) and the color information (C).

• S-Video: Provides a sharper picture than composite video by separating the color information (C) from the black and white information (Y).

• Component Video: Provides the most clear and sharp picture by separating the signal into full-bandwidth black and white information (Y), blue information (Pb), and red information (Pr).

Connections

17

18

Method 2 Through S-Video Output

TV

S-Video Cable

Audio Cable

1 Connect the DVD player's AUDIO OUT (L/R) and S-VIDEO OUT to your TV's AUDIO IN and S-VIDEO IN.

2 Press the TV/VIDEO button on the remote control to set the TV to "S-Video".

NOTE
• Be sure to connect the DVD player's AUDIO OUT (L/R) to your TV. Otherwise, no sound will be heard.

Method 3 Through Color Component Video Output (480i)

Use this method if your TV has COMPONENT VIDEO IN or DVD-Video input jacks.

TV

Color Component Output Cable

Audio Cable

1 Connect the DVD player's AUDIO OUT (L/R) and COMPONENT VIDEO OUT (480i) (Y, Pb, Pr) to your TV's AUDIO IN and COMPONENT VIDEO IN.

2 Press the TV/VIDEO button on the remote control to set the TV to "Component (DVD)" or "DVD". (Select the route according to your TV's User's guide)
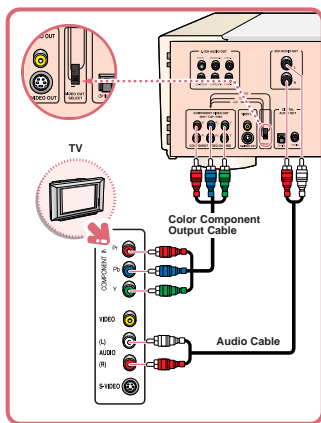
NOTE
• Be careful not to mix up the connections for Y, Pb, and Pr. Otherwise, your screen may appear reddish or bluish.
• Be sure to connect the DVD player's AUDIO OUT (L/R) to your TV. Otherwise, no sound will be heard.

Connections

Method 4 Through Progressive/HD Video Output (Component Video Output 480p/720p/1080i)

Use this method if your TV has COMPONENT VIDEO IN or DVD-Video input jacks.

1 For 480p (progressive) output, set the video output select switch on the back of the unit to "480p". For 720p or 1080i output, set it to "720p" or "1080i".

2 Connect the DVD player's AUDIO OUT (L/R) and COMPONENT VIDEO OUT (Y, Pb, Pr) to your TV's AUDIO IN and COMPONENT VIDEO IN.

3 Press the TV/VIDEO button on the remote control to set your TV to "Component (DVD)" or "Component (DTV)". (Select the route according to your TV's user's guide.)

TV

Color Component Output Cable

Audio Cable

On some TVs, DVD inputs are marked as color component video inputs.

NOTE
- Be careful not to mix up the connections for Y, Pb, and Pr cords. Otherwise, your screen may appear reddish or bluish.
- Be sure to connect the DVD player's AUDIO OUT (L/R) to your TV. Otherwise, no sound will be heard.
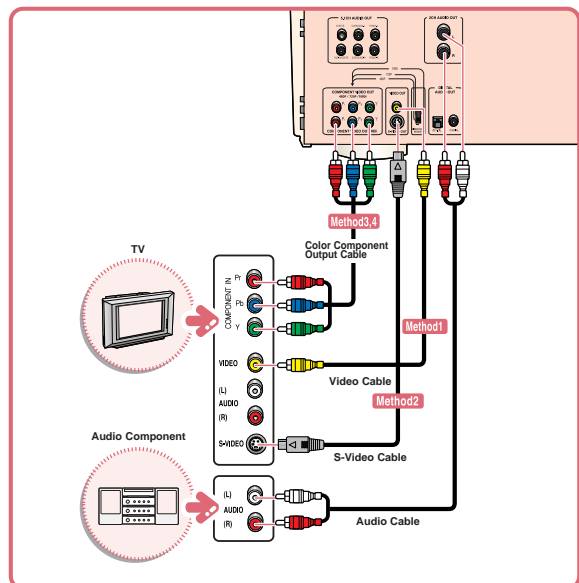
What is DCDi?

It is a video processing technology that eliminates jagged edges that appear when standard interlaced video is viewed on progressive-scan displays, producing smoother video images.

Caution
- For 480P video output, your TV must support progressive scan input.
- Also, for 720p/1080i video, you will need a TV that can receive HD video signal.
- If supported, you will need to set the TV menu to enable progressive scan or HD input.
- If playing a copy-protected DVD Disc, 720p output or 1080i output is automatically changed to 480p output.
- Picture flickering may occur for 1~2 seconds during the shifting process.

For listening through an audio component

Connect as follows if you want to output video to your TV and audio to an audio component.
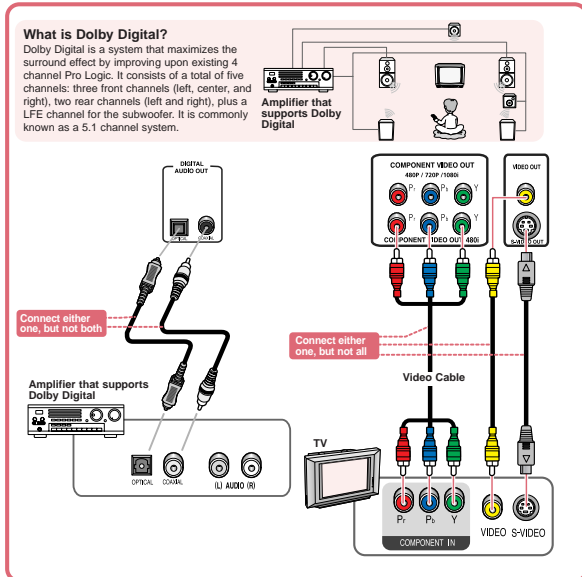
Method3,4

Method1

Method2

TV

Color Component Output Cable

Video Cable

S-Video Cable

Audio Component

Audio Cable

1 For video signal, select one from the four methods shown on pages 18-21 and connect to your TV.

2 Connect the DVD player's AUDIO OUT (L/R) to the audio component's AUDIO IN (L/R).

Connections

Connecting to a Dolby Digital amplifier

5.1 Channel Connection
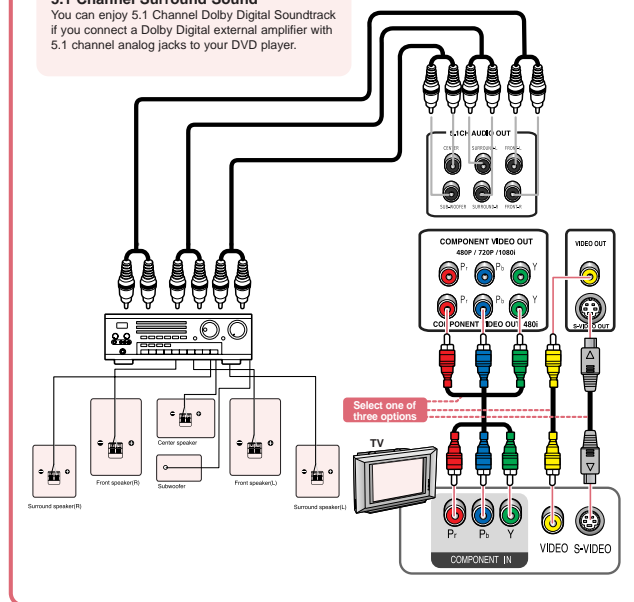
Connecting to an amplifier that supports Dolby Digital

What is Dolby Digital?

Dolby Digital is a system that maximizes the surround effect by improving upon existing 4 channel Pro Logic. It consists of a total of five channels: three front channels (left, center, and right), two rear channels (left and right), plus a LFE channel for the subwoofer. It is commonly known as a 5.1 channel system.

Amplifier that supports Dolby Digital

DIGITAL AUDIO OUT

Connect either one, but not both

Amplifier that supports Dolby Digital

OPTICAL COAXIAL (L) AUDIO (R)

COMPONENT VIDEO OUT
480P / 720P /1080i

Pr Pb Y

Pr Pb Y 480i

COMPONENT VIDEO OUT

VIDEO OUT

S-VIDEO OUT

Connect either one, but not all

Video Cable

TV

Pr Pb Y VIDEO S-VIDEO

COMPONENT IN

Setting audio before playing a DVD

If more than two speakers are connected to the DVD player as shown above, you will need to change Dolby Digital output from PCM to "Bitstream" in the inital audio setup in order to listen to Digital Surround Output. (See page 32 for setup instructions).

5.1 Channel Surround Sound

You can enjoy 5.1 Channel Dolby Digital Soundtrack if you connect a Dolby Digital external amplifier with 5.1 channel analog jacks to your DVD player.

5.1CH AUDIO OUT

CENTER SURROUND-R FRONT-R

SUBWOOFER SURROUND-L FRONT-L

COMPONENT VIDEO OUT
480P / 720P /1080i

Pr Pb Y

Pr Pb Y 480i

COMPONENT VIDEO OUT

VIDEO OUT

S-VIDEO OUT

Surround speaker(R)

Front speaker(R)

Center speaker

Subwoofer

Front speaker(L)

Surround speaker(L)

Select one of three options

TV

Pr Pb Y VIDEO S-VIDEO

COMPONENT IN

Connections

Setting the language preference before using the player

First Turn on the TV and press the TV/VIDEO button to select the Video mode.

1 **POWER** Press the POWER button.

2 DVD POWER Press the DVD POWER button.

- The following screen appears. (This screen appears only when the DVD player is used for the first time.)
- Use the remote control to set the number that corresponds to the desired language. (English 1, French 2, Spanish 3).

NOTE
- Be sure to set number for the desired language. Otherwise, the initial set values may be changed during the power on or off.

Playing DVDs

1 OPEN/CLOSE Press the OPEN/CLOSE button to open the disc tray.

2 Place the disc in the disc tray.

- Place the disc in the tray with the disc label facing up.

3 OPEN/CLOSE Press the OPEN/CLOSE button.

- The disc tray closes and playback starts automatically.
- You can also press the button.

To stop playback

To temporarily pause playback

To resume playback

NOTE
- If the player is left for 5 minutes in pause mode, it will stop.
- If the player is left in the stop mode for more than 30 minutes, the power will automatically shut off. (Automatic Power-off Function)
- If the player is left in the stop mode for more than one minute without any user interaction, a screen saver will be activated, and the TV screen will fade in and out repeatedly. Press the button to resume normal play.
- This ⊘ icon indicates an invalid button press.

Basic Operations

Setting the language preference

You can set the menu, audio, and subtitle languages recorded on the disc.

NOTE • This function depends on what languages are encoded on the disc and may not work with all DVDs.

1 SETUP **In the stop mode, press the SETUP button.**
  • The setup menu appears.

2 **Use the ▲▼ buttons to select the Language menu and then press the ENTER button. Select the Player Menu and then press the ENTER button.**

3 **Use the ▲▼ buttons to select the desired language and then press the ENTER button.**

	How to setup
Player Menu	Use to select the setup language recorded on the DVD Player
Disc Menu	Use this to select various menus recorded on the disc.
Audio	Use this to select the language that will be output to speakers.
Subtitle	Use this to select the subtitle language.

NOTE • This function depends on what languages are encoded on the disc and may not work with all DVDs.

Basic Operations

Setting the Rating Limit

Use this to restrict playback of adult DVDs you do not want children to view.
Up to 8 rating levels are available.

1 **SETUP**
In the stop mode, press the **SETUP** button.
• The setup menu appears.

2
Use ▲▼ buttons to move to the **Parental** menu and then press the **ENTER** button.

3 **0 ~ 9**
When using a password, use ◀ ▶ buttons to select "On". The password entry box appears.
• Enter the password.

4
Use ▲▼ buttons to move to the **Rating Level** menu and then press the **ENTER** button.

5
Use ▲▼ buttons to select the desired rating level.

For example

If you select level 6, level 7 and 8 discs cannot be played.
The higher the number, the closer to the adult level.

Setting Up Audio Options

You can choose audio options according to the setup of your audio system.

To change the password

1 Use ▲▼ buttons to move to "Change Password" and then press the ENTER button.

2 Enter new password and then press the ENTER button.

3 Enter the new password again.

1 In the stop mode, press the SETUP button.

• The setup menu appears.

2 Use ▲▼ buttons to select the Audio menu and then press the ENTER button.

3 Use ▲▼ buttons to select the option you want to set.

4 Use ◀ ▶ buttons to select the value you want.

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Basic Operations

31

32
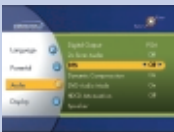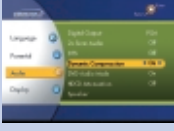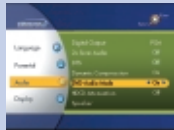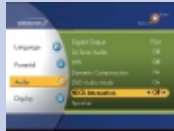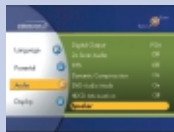
Audio Options	How to setup
Digital Output	If the DVD player is connected to a Dolby Digital amplifier, set Dolby Digital output to "bit stream". If you select bit stream when the player is connected to an audio component, sound is not produced.
2X Scan Audio	Select "On" if you want to hear sound during 2x playback. Note: DVD-audio discs recorded above 96kHz will not produce sound during 2x playback.
DTS	Select "On" only if DTS audio is recorded on the disc.
Dynamic Compression	Select "On" to apply dynamic compression. Select "Off" to apply standard range.

Audio Options	How to setup
DVD-Audio Mode	Select "On" when playing a DVD Audio Disc like as a DVD Audio Disc. Select "Off" when playing a DVD Audio Disc like as a DVD Video Disc.
HDCD Attenuation	Select "On" to set the unit to play back at 16 bit resolution if your amplifier has 16 bit D to A converters. This will help to avoid clipping. Select "Off" to set the unit to play at standard 20 bit HDCD resolution.
Speaker	Select this when setting up the speakers. Refer to "Speaker Setup" on page 54 for details.

Basic Operations

33

34

Setting Up Display Options

You can set options depending on your type of TV and DVD screen.

1 In the stop mode, press the SETUP button.
- The setup menu appears.

2 Use ▲▼ buttons to select the Display menu and then press the ENTER button.
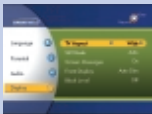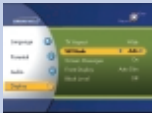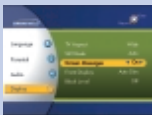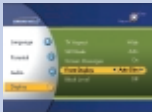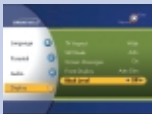
3 Use ▲▼ buttons to select the option you want to set.

4 Use ◄ ► buttons to select the value you want.

Display Options	How to setup
TV Aspect	Depending on the type of television you have, you may want to adjust the screen setting (aspect ratio) • **Letter Box** : You can see the total 16:9 ratio screen DVD, but black bars will appear at the top and bottom of the screen. • **Pan-Scan** : You can see the central portion of the 16:9 screen. Extreme left and right side of movie picture will be cut off. • **Wide** : Select this if you are connecting the DVD player to a wide screen TV. However, DVDs recorded with 4:3 ratio cannot be viewed as the full 16:9 picture even if you setup as shown above.
Still Mode	You can select how you want to compose the screen during a pause, step motion, or search. • If you select FIELD, the screen will not shake, but picture quality will slightly degrade. • If you select FRAME, the screen will shake, but picture quality remains the same.
Screen Messages	Display messages about the operation status.
Front Display	You can adjust the brightness of the unit's front panel display. If you select AUTO, the display is dimmed during playback, but gets brighter in the stop mode. Brightness changes in the order: AUTO DIM→DIM→BRIGHT.
Black Level	Select On if want to increase the brightness of the screen. You are unable to adjust picture brightness in case you select progressive video out.

Selecting 3D Effects/Disc Menu

If menus are recorded on the disc, you can view them and select options as follows.

To hear the 3D surround sound effect DVD-V VCD CD

1 **Press the 3D button.**

- Press buttons ▲▼ to select "3D Volume On".

NOTE This function does not work with DTS, MPEG, LPCM, and PPCM.

To view menus recorded on the disc DVD-V DVD-A

1 **Press the MENU button.**

- Disc menu appears. Menus appear differently depending on the DVD disc.
- CDs and VCDs (version 1.1) do not have menu features.

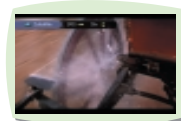*2* **Press ▲▼◄ ►buttons to move to the desired option and then press the ENTER button.**

Changing subtitle/audio language during playback

To Change the Subtitle Language DVD-V
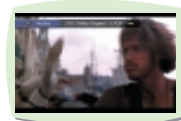
Press the SUBTITLE button.

- If the disc contains subtitle language information, you can press ◄ ►buttons to select from various subtitle languages.
- Subtitle language display may be different depending on the disc.
- If you set the subtitle language to "Off" by pressing the ▲▼ buttons, the subtitle will not be displayed.
- If more than one set of subtitles appear on the screen, cancel your TV's caption feature.

To Change the Audio Language DVD-V

Press the AUDIO button.

NOTE
- Depending on the disc, audio select/subtitle select functions may not work.
- You can use the DISPLAY button to select the audio language and subtitle language.

- If the disc contains audio language information, you can press ◄ ►buttons to select from various languages.
- Audio language display may be different depending on the disc.

Checking the Display

Depending on the disc, the display may not appear.

DISPLAY

Press the DISPLAY button.

DVD-V	VCD CD	DVD-A
The following is displayed: current title, chapter number, elapsed time, audio mode, subtitle language, camera angle, repeat mode, and 3D sound.	The following is displayed: current track number, elapsed time, audio mode, repeat mode, and 3D sound.	The following is displayed: current group, track, elapsed time, Page, repeat mode, and Audio.

DISPLAY

OSD disappears when the DISPLAY button is pressed again.

What is a title?
• A title refers to a single movie on a DVD-Video disc.

What is a chapter?
• In DVD-Video, a section of a title.

What is a track?
• A song or video recorded on a VCD or CD.

Going directly to the desired disc location

1 **DISPLAY** **Press the DISPLAY button.**

2 **Press ▲▼ buttons to select the desired title, chapter, elapsed time etc., and then press the ENTER button.**

3 **When selecting the title and chapter, press ◄ ► buttons to select the desired title and chapter, and then press the ENTER button.**

0 ~ 9 **When moving to the desired time, use the NUMBER buttons to enter the time and then press the ENTER button.**

Advanced Operations

Searching for a chapter/track

Playing in slow/step motion

To search a chapter/track during playback
DVD VCD CD

Turn the Shuttle dial.

For DVDs : Plays at 2x → 4x → 8x → 16x → 32x → 128x.
For VCDs : Plays at 2x → 4x → 8x.
For CDs : Plays at 2x → 4x → 8x.
To play normally, press ▶/Ⅱ .

JOG/SHUTTLE
• The JOG/SHUTTLE button will light each time it is pressed.
• When it lights, the Jog dial operates.
• When the light turns off, the Shuttle dial operates.

NOTE
• To maintain the selected speed, hold the Shuttle dial at the current position, or make sure that the remote control is not facing the main unit's remote control sensor.

To skip a chapter/track
DVD VCD CD

Press the ◀◀ ▶▶ buttons.

When the ◀◀ button is pressed

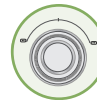Moves back to the beginning of the current chapter, or to the previous chapter if you press within three seconds.

When the ▶▶ button is pressed

Moves to the next chapter.

To slow playback while in the pause mode
DVD-V VCD

Turn the Shuttle dial.

• Each time the dial is turned, the disc is played at 1/8x → 1/4x → 1/2x.
  To play normally, press ▶/Ⅱ .
• Reverse slow playback is not possible with VCDs.

To view frame-by-frame
DVD-V VCD

Turn the Jog dial.

• Each time the dial is turned, the picture advances one frame at a time.
  To play normally, press ▶/Ⅱ .

• Press the JOG/SHUTTLE button and then turn ◯.
• **Each time the JOG/SHUTTLE button on the remote control is pressed, a light comes on.**
  * light is on: the Jog dial is activated.
  * light is off: the Shuttle dial is activated.

NOTE
• No sound is produced during a fast playback, slow playback, and step motion playback. However, sound is produced in 2x playback mode when 2x audio is turned on.
• DTS disc may not produce sound during 2x playback.

SAMSUNG

Advanced Operations

Playing repeatedly

Moving to the desired track

To play a preset section
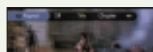
Repeats a chapter, title, or track

REPEAT

Press the REPEAT button to select as shown below and then press the ENTER button.

• Press the REPEAT button, use ◀ ▶ buttons to select the chapter, title, or track you want to play repeatedly, and then press the ENTER button.
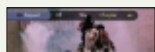
For DVDs

When not playing repeatedly

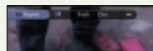To repeatedly play the current chapter

To repeatedly play the current title

For VCDs/CDs

When not playing repeatedly
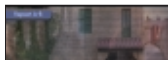

To repeatedly play the current track

To repeatedly play the entire disc

To play a certain segment repeatedly

REPEAT A - B

Press the A-B REPEAT button.

Press the button at the beginning (A) of the segment and again at the end (B) of the segment. The selected segment will begin repeating.

To return to normal playback

REPEAT A - B

Press the A-B REPEAT button again to cancel the A-B Repeat Playback.

You can also press the CLEAR button.
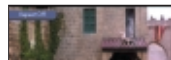
To move to the desired track   VCD CD

1 **DISPLAY**

Press the DISPLAY button.

2 **Press the ▲▼ buttons to move to the track.**

3 **Press ◀ ▶ buttons to select the desired track and then press the ENTER button.**

NOTE • Depending on the disc, this feature may not work.

Advanced Operations

43

44

Zooming in/changing camera angle

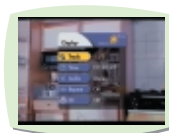## To view enlarged screen
DVD-V VCD

You can zoom in 2X or 4X during playback or when in the pause mode.

1 Press the ZOOM button.
- ⊕ appears on the screen.

2 Use the ▲▼ ◄ ► buttons to move to the area you want to zoom in on.

3 Press the ENTER button.
- You can view the image enlarged 2x.
- At this point, you can press the ▲▼ ◄ ► buttons to select the part of the screen you want to view.

To view a 4X screen

DVD-V
- In the Zoom 2X mode, press the ENTER button again.
- Each time the ENTER button is pressed, the screen zooms in as follows: Normal ➜ 2X ➜ 4X ➜ 2X ➜ Normal.

VCD Zooms in Normal ➜ 2X ➜ Normal.

NOTE This feature does not work with DVD-Audio discs.

To change the camera angle
DVD-V

For DVDs on which multiple angles are recorded, the angle can be switched during playback.

1 Press the ANGLE button.
- The Camera ( ) mark appears on the screen.

2 Press the ◄ ► buttons to select the desired angle.
- Up to 8 different camera angles can be viewed.

NOTE This function only works with discs on which multiple angles are recorded.

Advanced Operations

45

46

Programming in the desired order

You can set up a playback order for titles or tracks.
This function works only in the stop mode.

CD

1 In the stop mode, press the MODE button.

2 Press the ◄ ► buttons to select Program playback and then press the ENTER button.

If you select Random playback, your DVD player will play tracks at random.

What is program playback?
A function that plays titles, chapters, or tracks in programmed order.

What is random playback?
A function that plays titles, chapters, or tracks at random.

3 Press the ▲▼ ◄ ► buttons to move to the desired track number and then press the ENTER button.

►/I To start playback after the programming is complete

CLEAR To cancel a wrong selection during programming

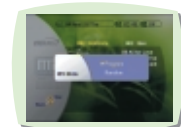**MODE** To cancel the entire program

MP3

1 In the stop mode, press the MODE button.

2 Press the ▲▼ ◄ ► buttons to select Program playback and then press the ENTER button.

• If you select the random playback, your DVD player will play MP3 files at random.

3 Press the ▲▼ ◄ ► buttons to move to the desired MP3 file and then press the ENTER button.

NOTE
• You can program in the desired order even during playback.
• This function works with Audio CDs and MP3 discs only.

To clear the entire program
• Press ⌵ during playback.
• Pressing ⌵ to open and then close the disc tray will also delete the program.

Advanced Operations

47

48

Bookmarking a desired scene

You can bookmark a favorite scene within a movie to recall it at any time during playback.
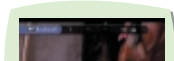
To save a favorite scene

DVD-V VCD

1 Press the BOOKMARK button.

2 Press the ENTER button when the desired scene appears.
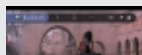
Number "1" appears and the scene is saved.

3 Press the ENTER button to move to the next mark.

• Press the ENTER button to save the desired scene. Number "2" appears and the scene is saved.
Repeat the process for other scenes.

To recall a marked scene

• Press ⊖.
• Press the ◀ ▶ buttons to move to the marked scene and then press ▶Ⅱ.
  * The color of the number changes.
  * The mark will be recalled.

To clear a bookmark

• In the bookmark screen, select the number you want to delete and then press the CLEAR button.

NOTE

• This feature does not work with DVD-Audio discs.

Using the group function

Tracks recorded on a DVD-Audio disc are divided into groups.
You can select the desired group and track.

DVD-A

1 Press the GROUP button.
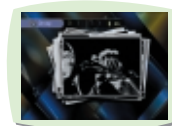
2 Press the ▲▼ buttons to select the desired group number.

3 Press the ▲▼ buttons to move to the track (T), press the ◀ ▶ buttons to select the desired track number, and then press the ENTER button.

• The selected group and track will be played.

NOTE

• You can also use the NUMBER buttons on the remote control to select a group. Press the relevant number and then press the ENTER button or PLAY button to play the selected group.

• Depending on the disc, this feature may not work.

Playing a bonus group

Some DVD-Audio discs contain a bonus group.
To use the bonus group, you will need to enter the 4-digit password. Refer to the jacket of the disc.

Advanced Operations

Using SH/FE (Shannon Filter / Fluency Filter) Functions

The Fluency filter eliminates the 20KHz cutoff frequency so you can enjoy DVD-Audio discs to the fullest.
The Shannon Filter substantially reproduces the Audio Signals recorded in the Disc with almost no distortion.

DVD-V DVD-A VCD

1 Press the SH./FE. button.

2 Press the ◄ ► buttons to select SH.

• The FE DAC indicator turns off.

3 Press the ◄ ► buttons to select FE.

• The FE DAC indicator turns on gain.

Adjusting the screen

Adjust the screen to the desired mode during playback.

1 Press the SETUP button during playback.

The Video adjustment menu appears.

Brightness	: -3~+3
Color density	: -3~+3
Contrast	: -3~+3
Sharpness	: 0~+5
Noise Reduction	: On/Off
Black Level	: On/Off

2 Press the ▲▼ buttons to move to the option you want to adjust.

3 Press the ◄ ► buttons to adjust the desired mode.

Advanced Operations

51

52

Using the index and page functions

Use these to view the desired index and page while playing a DVD-Audio disc.

DVD-A

1 Select using the INDEX button if a track is divided into multiple indexes.

2 Select using the PAGE button if a track contains many still images.

NOTE
- The INDEX and PAGE buttons can be used only when playing a DVD-Audio disc.
- The INDEX button does not work if a track consists of a single index.
- The PAGE button does not work if the current track does not contain still images or if the disc contains a slide-show. Also, still images may be displayed abnormally depending on the authoring method.

Speaker Setup

Setting the Speaker Mode

You can set the speaker mode for your current system.
Initially it is set as follows.
- Front speaker (L/R): Large
- Center speaker: Not found
- Subwoofer: Not found
- Surround speaker (L/R): Not found

- If you have connected the system to a speaker with low frequencies of 100Hz or below, select "Found (Large)".

- If you have connected the system to a speaker without low frequencies of 100Hz or below, select "Found (Small)".
  However, if you don't have a subwoofer connected, always select "Found (Large)" for Front Speakers (L/R).

Setting up TEST

- The test output signals will be heard clockwise starting from the Front Speaker (L). Adjust the channel balance to match the test signal volume stored in the system.
  FRONT (L) ➜ CENTER ➜ FRONT (R) ➜ SUBWOOFER ➜ SURROUND (R) ➜ SURROUND (L).

Advanced Operations

Troubleshooting

Disc tray won't open.

> **Check 1** Check the power supply voltage.

Disc won't play.

> **Check 1** Check that the disc in the tray.
>
> **Check 2** Check the power supply is 120V.
>
> **Check 3** DVDs purchased outside your region may not play. Check that the disc's region code is either "1" or "ALL".
>
> **Check 4** Check that the disc is placed with the label side facing up.
>
> **Check 5** CD-ROMs and DVD-ROMs cannot be played.

Playback won't start immediately.

> **Check 1** When the play, stop, and open operations are repeated too quickly, the disc drive motor produces heat. The motor stops running because the protector circuit is being activated until the motor cools down. This is normal.
>
> **Check 2** Check that the batteries in the remote are not drained.

No sound.

> **Check 1** Are you viewing in the slow motion or step motion? (No sound is heard during variable speed playback.)
>
> **Check 2** Check the connections and make sure that the initial settings are correct.
>
> **Check 3** Check that the disc is placed with the label side facing up.
>
> **Check 4** Is the disc severely damaged? (If not, clean the disc.)

No picture, no sound, or tray opens 2-5 seconds later.

> **Check 1** Was the player suddenly moved from a cold place to a warm one? Remove the disc and let stand for 1 to 2 hours with the power on. (You can use the player again after the condensation disappears.)

Sound quality is irregular.

> **Check 1** Check the connections to the Dolby Digital amplifier.
>
> **Check 2** Check that the power plug isn't loose.
>
> **Check 3** Check that the connection jacks are free from dirt or debris.

Disc keeps running but no picture, or picture is distorted and quality is poor.

> **Check 1** Check that the TV power is turned on.
>
> **Check 2** Check that the connections are secure.
>
> **Check 3** Check that the main unit hasn't been paused.
>
> **Check 4** Check that the disc is clean and not damaged.
>
> **Check 5** Defective discs may not play.
>
> **Check 6** When a dark scene changes to a bright scene during playback, the screen may shake vertically. Some disturbance is normal.
>
> **Check 7** Check the video output select switch.

Remote control won't work.

> **Check 1** Check that the remote control is being used within the appropriate range of distance and angle of operation, and that there aren't any obstacles.
>
> **Check 2** Check that the batteries in the remote are not drained.

I forgot the password for rating level.

> **Check 1** With the power on, hold down the ⏯ and ◀ buttons on the player simultaneously for at least three seconds. This will reset the password and restore all menus to the initial factor settings. (However, this operation is possible only if the disc is removed from the player.)

Appendix

Troubleshooting

Dolby Digital 5.1 Channel Surround Sound is not produced.	⇒	**Check 1** Dolby Digital 5.1 Channel Surround Sound is possible only if DVDs are recorded with "Dolby Digital 5.1 Channel" and a Dolby Digital amplifier is connected to the DVD player.
		Check 2 Check that the disc has "Dolby Digital 5.1 Channel" mark.
		Check 3 In the stop mode, press the SETUP button on the remote control to check that the audio setup in the initial setup is correct.
		Check 4 Check that the connections are correct.
Audio and/or subtitle language is not the one selected from the initial setting.	⇒	**Check 1** Audio and subtitle languages can be switched according to the disc menu only if DVDs have **Check 2** multiple audio/subtitle languages recorded on them.
Desired angle cannot be changed.	⇒	**Check 1** Camera angles can be changed only if DVDs have multiple angles recorded them, and "📹" mark is shown on the disc and on the screen.
Menu won't come up.	⇒	**Check 1** Check that the disc has menus recorded on it.
		Check 2 Check that the remote control is being used within the appropriate range of distance and angle of operation, and that there aren't any obstacles.
		Check 3 Check that the batteries in the remote are not exhausted.
Aspect ratio cannot be changed.	⇒	**Check 1** DVDs are manufactured as 16:9 Wide, 4:3 Letter Box, or 4:3 Pan-Scan picture. You can play the 16:9 wide DVDs in 16:9 WIDE mode, 4:3 Letter Box mode, or 4:3 Pan-Scan mode; but 4:3 encoded DVDs provide the 4:3 screen only. Refer to the DVD disc jacket and then select the appropriate function. 4:3 standard discs cannot be played in the wide mode.
Only 480p is output; even when the video output select switch is set.	⇒	**Check 1** If playing a copy-protected DVD, 720p output or 1080i output is automatically converted to 480p output.

Specifications

GENERAL	Power Supply	120V, 60Hz
	Power Consumption	53W
	Weight	37.5 lbs
	Dimensions	16.9in(W) X 16.3in(D) X 5.4in(H)
	Operating Temperature Range	+41ºF to +95ºF
	Operating Humidity Range	10% to 75%
USABLE DISCS	DVD : 5" (DIGITAL VERSATILE DISC)	Reading Speed: 11.45ft/sec
		Max. Playing Time: 135 min.
	CD : 5" (COMPACT DISC)	Reading Speed: 3.9 to 4.6ft/sec
		Max. Playing Time: 74 min.
	CD : 3 1/2" (COMPACT DISC)	Reading Speed: 3.9 to 4.6ft/sec
		Max. Playing Time: 20 min.
	VIDEO-CD : 5"	Reading Speed: 3.9 to 4.6ft/sec
		Max. Playing Time: 74 min. (Audio + Video)
VIDEO OUTPUT	Composite Video	Channel: 1.0Vp-p(75Ω load)
	Component and Progressive Component	Y : 1.0Vp-p(75Ω load)
		Pr : 0.70Vp-p(75Ω load)
		Pb : 0.70Vp-p(75Ω load)
	S-VIDEO	Luminance signal: 1.0Vp-p(75Ω load)
		Color signal: 0.286Vp-p(75Ω load)
AUDIO OUTPUT	2 Channel	Left (1/L), Right (2/R)
	5.1 Channel	F/L, F/R, R/L, R/R, C/T, S/W
	Output Level	Analog Audio : 2Vrms(1KHz)
		Digital Audio: 1.15Vp-p
	Frequency Response	48 KHz sampling: 4Hz~24KHz
		96 KHz sampling: 4Hz~48KHz
		192 KHz sampling: 4Hz~96KHz
	S/N Ratio	110dB
	Dynamic Range	100dB
	Total Harmonic Distoration	0.002%

Sound output specifications

For DVDs, optical digital audio output jack and digital audio output jack do not have 96kHz sampling.

DISC OUTPUT		DVD	VIDEO-CD	CD	DVD Audio
Analog Audio Output	2Channel(R1, L1)	48/96KHz sampling	44.1KHz sampling	44.1KHz sampling	192KHz
	5.1Channel(R/R, R/L, C/T, SW, F/R, F/L)	48KHz sampling	-	-	44.1KHz/48KHz/88.2KHz/96KHz
Digital Audio Output	COAXIAL	48KHz sampling	44.1KHz sampling	44.1KHz sampling	48KHz
	OPTICAL	48KHz sampling	44.1KHz sampling	44.1KHz sampling	48KHz

Appendix

LIMITED WARRANTY TO ORIGINAL PURCHASER

This SAMSUNG brand product, as supplied and distributed by SAMSUNG ELECTRONICS AMERI-CA, INC. (SAMSUNG) and delivered new, in the original carton to the original consumer purchaser, is warranted by SAMSUNG against manufacturing defects in materials and workmanship for the following limited warranty period:

<div align="center">One (1) Year Parts and Labor</div>

This limited warranty begins on the original date of purchase, and is valid only on products purchased and used in the United States, and does not include transportation, installation, removal or reinstallation.
Warranty repairs must be performed by SAMSUNG's authorized service center. To receive warranty service, the original dated bill of sale must be presented upon request as proof of purchase to SAM-SUNG or SAMSUNG's authorized service center. Transportation to and from the service center is the responsibility of the purchaser.

SAMSUNG will repair or replace this product, at our option and at no charge with new or reconditioned parts, if found to be defective during the limited warranty period specified above. The product must be returned during the warranty period with transportation charges prepaid to SAMSUNG's designated service center. Prior to returning any product for warranty service, the purchaser must co tact SAMSUNG for problem determination and service procedures. SAMSUNG does not warrant uninterrupted or error-free operation of the product. All replaced parts and products become the property of SAMSUNG and must be returned to SAMSUNG. Replacement parts and products assume the remaining original warranty, or ninety (90) days, whichever is longer.

This limited warranty covers manufacturing defects in materials and workmanship encountered in normal, noncommercial use of this product and shall not apply to the following, including, but not limited to: damage which occurs in shipment; applications and uses for which this product was not intended; failures or problems which are caused by products or equipment not supplied by SAM-SUNG; accidents, misuse, abuse, neglect, misapplication, fire, water, lightning or other acts of nature; incorrect electrical line voltage, fluctuations or surges; damage caused by improper or faulty installation; improper connection with any peripheral; product alteration or modification; improper or unauthorized repair; cosmetic dam-age or exterior finish; product with altered serial numbers; failure to follow operating instructions, customer adjustments, maintenance and environmental instructions that are covered and prescribed in the instruction book; use of non-SAMSUNG or unauthorized parts, supplies, accessories or equipment which damage this product or result in service problems; failures or problems due to incompatibility with other equipment.

Appendix

Memo